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ABSTRACT

This paper uses the year 1972-73 as a base line in evaluating the progress of Illinois toward certain "equity goals." In determining the equity goals, two dimensions are studied--disparity and wealth neutrality. One measure of disparity is the permissible variance in school district expenditures expressed in the coefficient of variation, another is the McLoone index. Two different calculations were also made using the concept of fiscal neutrality or wealth neutrality. One calculation uses the Gini index, the other the simple regression of expenditures on a specification of wealth. The results of the calculations are presented in charts and in appendices. Subject to the limitations identified, the general finding seems clear. For four years the basic legislation passed in 1973 and the substantial increase in state aid necessary to fund that reform were successful in moving Illinois toward less expenditure disparity between school districts and greater wealth neutrality. However, in the last two years a reversal has taken place. The reversal has caused all the gains to be lost with regard to expenditure disparity in unit districts and elementary districts, and some of the gains to be lost with regard to wealth neutrality. (Author/IRT)

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EQUITY GOALS IN ILLINOIS SCHOOL FINANCE: 1973-1979

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> Revolutions are ambiguous things. Their success is generally proportionate to their power of adaptation and to the reabsorption within them of what they rebelled against.
>
> --George Santayana

Background

K-12 school finance studies of the sixties and early seventies often had three distinguishing characteristics. First, more often than not, they were done on an individual state-by-state basis; second, data for the studies were collected at one point in time; and third, focus of the studies was on recommendations to be made to the individual state legislatures to change the existing K-12 finance law. The usual format was to describe in some detail the existing state system of K-12 finance, then to offer several alternative ways of financing the schools in that state, and finally to argue that one, or at most two or three, of these alternative institutional structures should be seriously considered by the legislature as the basis for new school finance legislation. Illinois has had its share of this type of action oriented study.(1) In the late 1970s, however, a new genre of K-12 finance studies have arisen which are more in the nature of postmortems. They might well be described as a "pathology" of school finance reform. These

studies are attempted both on a multistate basis and on a state-by-state basis. They require data gathered at more than one point in time. They tend to follow a particularly important reform in a state or states, and they in essence monitor the results of that reform. "Pathology" is a particularly appropriate term for this type of study, since the principal finding of these studies is frequently that the reform or reforms did not succeed as well as the reformers hoped. We shall return to this important point at the conclusion of the paper.

In the summer of 1973 the Illinois General Assembly changed the institutional structure under which the K-12 schools of the state were financed. The basic legislative structure was then amended in 1976, and again in 1978. We have written elsewhere concerning the details of this "reform."(2) Later in this paper a very brief description is again provided, but the reader is referred to our earlier reports for detailed descriptive information. The Illinois system of K-12 finance, like the system of K-12 finance in many states, is a complicated affair. The distribution of state funds is affected by a complex set of regulations which have grown up over several decades. It is not the custom in Illinois, nor in many other states, to simply wipe the slate clean and legislate an entirely new procedure for funding the K-12 schools. Rather, the institutional structure is an accretion of layer upon layer of legislative changes made by successive legislative sessions. A complete "pathology" of school finance reform would evaluate

the effects of each of these legislative changes, holding all other changes constant. This can be done through a computer simulation process, although the expense can be considerable in a state like Illinois with a complicated law, many school districts, and three types of districts (K-12, elementary, and high school). However, as in many medical procedures, one does not usually go immediately to the more complicated diagnostic procedure until the general state of the patient's condition has been ascertained by more "holistic" tests. That is the task of this paper. Using the year 1972-73 as a base line, we will evaluate the progress of Illinois toward certain "equity goals," the operationalization of which is described in the next section. Our principal empirical findings will then be presented, together with the qualifications on these findings. In the sections on policy implications, we shall go beyond the "holistic" evaluation and speculate on what kind of legislative changes have brought about the findings we have presented. Finally, we shall note some similarities between this evaluation in Illinois, and evaluations completed in other states.

Equity Monitoring Techniques Used

As Johns and Magers have pointed out, current school finance evaluations usually report on three dimensions of reform: "sufficiency, disparity, and wealth neutrality."(3) Sufficiency relates to the level of support and the procedure is often to compare the level of support of the state in

question to the levels of educational support in other states, or to compare the increase in support through time with increases in the cost of living. Disparity takes the form of indicating whether there have been decreases in the variation of expenditures per pupil, of wealth per pupil, and often of tax rates between school districts after the reform has taken place. Disparity has been the central focus of several court decisions relative to the constitutionality of some school finance systems.(4) Wealth neutrality tests the relationship between a measure or measures of school district wealth on the one hand, and expenditures per pupil on the other hand. To be judged successful, a reform must reduce the strength of the relationship between wealth and expenditures per pupil. This criterion for a successful school finance reform has also been generated in large part from court decisions.(5) Wealth neutrality has more recently been conceptually divided into "simple" wealth neutrality versus "conditional" wealth neutrality. "Conditional" wealth neutrality looks at the relationship between wealth and expenditures with one or more other school district characteristics "controlled"; for example, the tax rate of the district. The concept of "conditional" wealth neutrality has been developed in some detail by Friedman and Wiseman.(6) Friedman and Wiseman believe that "conditional" and "simple" wealth neutrality are not compatible state goals, e.g., the legislature must choose one or the other of these

goals. Johns and Magers believe that "conditional" wealth neutrality is the more appropriate test for states that have any form of "reward for effort" or "district power equalization" grant-in-aid system.

The study reported here uses only the two dimensions of disparity and wealth neutrality. Further, the concept of wealth neutrality that is used is "simple" wealth neutrality, rather than "conditional" wealth neutrality. In addition, only some of the operationalizations of disparity and wealth neutrality that Berne has suggested have been employed. These limitations spring primarily from the desire to make this report compatible with the reports on Illinois school finance which have been submitted to the Illinois General Assembly in prior years. The Center does have underway additional studies of Illinois school finance which employ the notion of "conditional" wealth neutrality, and which look at other operationalizations of disparity and wealth neutrality.

Two measures of disparity have been used. The first was labeled "permissible variance" in the prior studies, and assumes that the legislature wishes to reduce the variation in expenditures per pupil between districts with the passage of time. The descriptive statistic then used is the "coefficient of variation," e.g., the standard deviation divided by the mean and multiplied by 100. Berne has found this to be a reliable measurement of disparity.(7) It should be pointed out, however,

that not all "authorities" in school finance are of the opinion that the overall variance in educational expenditures per pupil should be reduced. As Garms and others have pointed out,(8) if individual student needs and regional cost-of-education differences are taken into consideration, the requirement that a successful reform must reduce the expenditure disparity between districts is called into question. Some courts have tried to avoid this tangle by requiring the reduction of expenditures not linked to special education needs of pupils. However, it is far from clear just what expenditure differentials would be considered "legitimate" by a court, and what expenditure differentials would be considered "illegitimate."

There is another school of thought which holds that expenditure variation above the median or mean expenditure in the state should not be reduced and that, in fact, the only legitimate concern of the state is with the expenditure per pupil variation below some measure of central tendency. This group argues that "bringing up low spending districts" should be the primary concern of the state, and that higher spending districts should be allowed to move out in front as far as they want to go. A number of older school finance scholars held to this policy position, not the least of which was the late Paul Mort of Columbia University.(9) Professor Eugene McLoone of the University of Maryland is a forceful advocate of this position in the modern era.(10) McLoone has devised several indexes

to look at the bottom half of the expenditure distribution only. The particular one used in this report is based upon the percentage of students found below the median expenditure level and the amount of dollars needed to bring all students to the median expenditure in the state. This index is constructed in such a fashion that its value should rise as fewer and fewer students are found below the median expenditure level. It therefore is a measure of disparity, but only the disparity below the central tendency. By contrast, the coefficient of variation takes into consideration the total variation, above, as well as below, the central tendency.

In addition to these two measurements of disparity, we have also used two measurements of wealth neutrality. The first involves the Gini Index. As in previous research reported be the Center, this index is based upon a bivariate set of measurements, rather than a univariate set of measurements.(11) Berne refers to this as a "wealth weighted" Gini coefficient.(12) This usage is to be contrasted with the traditional Gini applications made by McLoone, Michelson, Grubb, Alexander, and others, which are based upon expenditures alone.(13) Since the Gini coefficient has been used in different ways in school finance research, it is necessary to ascertain, in each piece of research, just what kind of application has been made.(14)

Basically what we have done with this "wealth weighted Gini" is to rank the school districts from low to high upon

some specification of wealth. In Illinois we have used property valuations per weighted pupil and income per weighted pupil. Once this wealth ranking of districts is completed, a cumulative percentage distribution of pupils is then formed, starting from the poorest district and working to the top. A similar cumulative distribution is established for state and local revenues or expenditures. The two cumulative percentage distributions (wealth and expenditures) are then plotted on an X-Y axis. If local wealth were not a factor in expenditures in a given state, the X-Y plot of the two cumulative percentages, wealth and state and local revenues, would in fact be a straight line. That is, the poorest 10 per cent of students would get 10 per cent of the available "pie" of state and local monies, the poorest 20 per cent would get 20 per cent, and so on. A distribution of state and local funds would prevail that would be "neutral" of local resource disparities, and this is exactly what is necessary in any operational definition of "wealth neutrality."

When the poorest 10 per cent of the students receive less than 10 per cent of the funds, the poorest 20 per cent less than 20 per cent of the expenditures, and so on, the plotting of the cumulative percentages will result in a curve which departs from the straight line representing absolute wealth neutrality. This "Lorenz curve" is interesting in and of itself, but researchers usually prefer a numerical value which will describe

the extent of the departure of the curve from the straight line. There are several ways of computing such a value, referred to as a Gini index, Gini coefficient, or coefficient of concentration. Appendix A to this paper, prepared by Ramesh Chaudhari, sets forth one possible calculation procedure. Readers interested in examining the computer program for such a calculation should address themselves to Dr. Chaudhari.(15) The Gini values should be interpreted in the following manner: the smaller the value of the coefficient, the closer the state of Illinois has moved to the goal of wealth neutrality: that is, larger values indicate a greater departure of the curve from the straight line. As long as the curve does not cross the line, the interpretation is straightforward. Unfortunately, we have found in recent usage of the procedure that the curve does cross the line in some instances, and this makes interpretation difficult. We have, however, retained the procedure because the unit of analysis in the Gini is the student, rather than the school district. We shall come back to this point in the limitations section of this report.

Complications with the use of the Gini, and the lack of general acceptance of a "wealth weighted" Gini, have led us to use a more familiar tool in financial and economic research, the linear least squares regression, as an alternative measure of wealth neutrality. This technique, used also by Michelson(16) and Feldstein,(17) regresses expenditures against some measure

of school district wealth. Both variables are transformed into their logarithms to facilitate comparisons through time and space. This transformation renders the coefficient an "elasticity," and Berne has again found that this simple elasticity is a reliable measure of wealth neutrality.(18) This is the whole or gross elasticity, however, and not a net or partial elasticity, which would be necessary if a concept of "conditional" wealth neutrality were being used rather than "simple" wealth neutrality. The simple regression in the logs, or simple "elasticity," should be interpreted in the following manner: the smaller the value of the coefficient, the closer the state of Illinois has moved to the goal of wealth neutrality. In this report, as in other reports, we have used both income and property valuations as separate specifications of district wealth.

Findings

The findings are presented in charts one through five. The data for these charts are found in the corresponding tables one through five of Appendix B. In each case, the calculation for the year prior to the reform of the summer of 1973 (1972-73) has been plotted first, and then each succeeding year up to and including 1978-79 has been plotted. Two points were plotted for 1978-79, one employing the weighting of title one eligibles used by Illinois between 1973-74 and 1977-78, and then a second calculation, using a new title one weighting legislated for the

first time in Illinois in 1978-79. Therefore, all our calculations, including the base year 1972-73, are in a "per pupil" term that is peculiar to Illinois, e.g., the title one weighted average daily attendance (TWADA). This obviously constitutes the first limitation on our findings; that is, these data are not compatible with studies which use average daily attendance or average daily membership. Other limitations on the findings are outlined in the next section of this report.

As indicated in the previous section, two operationalizations were made using the notion of "permissible variance," one using the coefficient of variation, and the other using the McLoone index. With regard to the coefficient of variation, the finding for unit districts (K-12) is not very cheerful as far as "reform" is concerned. The disparity among unit school districts in Illinois in 1978-79 is <u>greater</u> than it was before the reform in 1972-73. This is clearly a "U shaped" function; that is, progress had been made on reducing expenditures per pupil for four years after the 1973 reform. However, the last two years show a movement back to greater disparities that takes one into a higher reading than the base year. Almost the same pattern is observed for elementary districts. Only with regard to high school districts has there been a reduction in disparity below the 1972-73 levels, and the reduction of disparity observed here is largely accomplished in the first four years after the reform. If the courts continue to insist on reduction of expenditure disparity as the sine qua

non of success of a legislative reform, they will not find the Illinois reform, as amended, very successful. The fact that progress was being made for four years, e.g., prior to the amendments, suggests that it was the amendments, and not the 1973 reform itself, which reversed the progress toward less disparity between school districts. We shall return to this point at the conclusion of the report. The findings for the McLoone index, which deal only with those students in districts below the median expenditure, are similar to that for the overall variation, e.g., progress in moving up the spending of low spending districts toward the middle of the distribution is not very spectacular. Unit districts and elementary districts end up about where they started in 1972-73. Only with regard to high school districts has there been much reduction in the variation in expenditures per pupil among the low spending districts, and much of this progress was again during the first four years after the reform, not the last two years.

Two different calculations were also made using the concept of "fiscal neutrality" or "wealth neutrality." One calculation uses the Gini index and the other calculation the simple regression of expenditures on a specification of wealth, with both variables in log form. Since the size of the Chicago school district affects some of these calculations, two runs were made, one with Chicago and one without Chicago. For unit districts, progress was made in the first four years after the reform, but very little progress has been made in the last two

years. Problems with the curve crossing the line have arisen, however, since 1976-77, and this makes reliance on the Gini index alone difficult. With regard to high school districts, progress was made in the first four years with little change in the last two years. Elementaries show a "U shaped" function observed with regard to disparity measurements. Progress toward wealth neutrality was made in the first four years, and then reversed in the last two years. Findings with regard to wealth neutrality using the regression approach are divided into two specifications of wealth--one is property valuations per TWADA, and one is personal income per TWADA. Unfortunately, the only income data currently available on Illinois school districts comes from the 1970 federal census of population and housing. When property valuations are used as the measurement of wealth, the findings using the regression approach are not greatly different than with the Gini approach. However, the "U shaped" function, manifest in many of these charts, is now clear with regard to unit districts; e.g., progress was made in Illinois toward wealth neutrality for four years and then a reversal took place for the last two years. When income is used as the specification of wealth, unit districts do show a steady progression toward the goal of wealth neutrality. However, there is little change for high school districts and, by contrast, elementaries show a much higher nonneutral score in 1978-79 than in the base year 1972-73.

Subject to the limitations noted elsewhere in this report, the general finding seems clear. For four years the basic legislation passed in 1973 and the substantial increase in state aid necessary to fund that "reform" were successful in moving Illinois toward the goals of less expenditure disparity between school districts and greater wealth neutrality. However, in the last two years a reversal has taken place. This reversal has caused all the gains to be lost with regard to expenditure disparity in unit districts and elementary districts, and some of the gains to be lost with regard to wealth neutrality. The fact that reversals did not occur until 1976-77 strongly suggests that the amendments to the basic 1973 legislation, rather than the basic 1973 legislation itself, are to blame for these reversals.

Limitations

In addition to the fact that all our findings are in TWADA terms, there are other limitations that ought to be expressly noted. For example, although we have spoken loosely of "expenditures per pupil" in this and in previous Center reports, the dollar per pupil figure we have been using is not really an "expenditure" at all. In order not to confuse the effects of state categorical grants with state general purpose grants, we have deliberately excluded all state categorical grants from these calculations, and for that matter all federal categorical grants. Thus the dollars in question are really "revenues"

rather than "expenditures," and particular kinds of revenues at that. They are the general state aid plus the amount of dollars raised through the property tax locally. Neither this report, nor any previously published report of the Center, deals with the effects of state categoricals on equity goals. A Center study is presently underway which deals with the effects of special education grants on equity goals.(19)

From a related point of view, it can also be argued that the funds sent to Illinois school districts by the TWADA weighting are "categorical" in nature. This has been a hotly contested matter in the Illinois General Assembly. If such funds are indeed intended to be "categorical"--that is, used only for the purposes of compensatory education--then another approach to evaluation would be to exclude these funds from the general state aid and divide not by TWADA but by WADA. However, this would picture a state of affairs that has little political reality in Illinois. The fact is that the title one weighting is a very important part of the Illinois general grant-in-aid distribution, in spite of a recent weakening of that weighting. In any event, evaluations should be conducted in Illinois using total revenues per TWADA and total revenues per ADA.

An additional limitation springs from the fact that these computations all use the district as the unit of analysis, with one exception. When the Gini coefficient is used, the unit of analysis is the child rather than the district. Berne has demonstrated that different results can be obtained by using the

district versus the child as the unit of analysis.(20) When the district is used as the unit of analysis in Illinois, Chicago has exactly the same weight in the calculation as the smallest district in the state. There are obvious problems with that formulation. However, if the child is used as the unit of analysis in Illinois, then whatever happens to Chicago dominates the entire picture. The fact is, neither one of these measurement approaches is politically realistic. What happens to Chicago is certainly important to the General Assembly, but it does not automatically dictate what the General Assembly will do. Realistically, we shall probably have to continue using measurements in which sometimes the district is the unit of analysis and sometimes the child is the unit of analysis. The wealth-weighted Gini approach pioneered at the Center was originally intended to escape the problem of using the district as the unit of analysis. However, Berne has suggested the use of a weighted regression as another way to escape the district as the unit of analysis, and this may be preferable to the Gini procedure.(21) The Center is also experimenting with child-weighted statistical procedures.

The 1973 Reform

As the law passed in 1973 nothing was done to the taxing power of districts except the enactment of a rollback for high taxing districts, which affected ability to tax in a few high tax districts. Even this change was repealed in 1976.

Any inequities that existed (for example, the taxing power of high school districts which gave them local dollars rather than state aid was not changed, despite the new law giving them access to state dollars at the same rates as other districts which did not have adequate local taxing power) and all referendum requirements were left as they existed. It is fair to say that only the common school fund section of Article 18, Section 8 of the School Code of Illinois was amended. The taxing power of school districts and the referendum restriction on that taxing power found in Article 17 was in no way altered.

A new concept known as the "resource equalizer" was enacted, which became a fourth optional formula for districts. It included a provision for districts taxing at a high level to roll back the tax rate as the state aid went up. If a previously enacted formula with a slight increase that was included (19 per cent add-on was increased to 25 per cent) produced more revenue than the new formula, the district could, and still may, choose the state aid option that produces the most money. The four optional formulas that districts could choose from in 1973-74 were:

(1) Foundation Formula

$$G = TWADA \times F - (T_{(1)} \times AV) + 25\%$$

(2) Alternate Method

$$G = \left(\frac{X}{AV/TWADA}\right) \times \$120 + 25\%$$

(3) Flat Grant

$$G = TWADA \times \$48 + 25\%$$

(4) Resource Equalizer

$$G = TWADA_{(c)} \times T_{(2)} \times (AV_g - AV_1)$$

where:

(a) G = state grant

(b) WADA = ADA weighted 1.25 for high schools and .5 for kindergarten

(c) TWADA = (District Title I Eligibles x .45) + WADA

(d) $TWADA_{(c)} = WADA + TI_1 \times \dfrac{\dfrac{TI_1}{WADA_1}}{\dfrac{TI_s}{WADA_s}} \times .375$ not to exceed .75

where:

TI = Title I count

i = individual district

s = state

(e) F = foundation level

(f) $T_{(1)}$ = qualifying operating tax rates:
$1.08/$100 assessment for K-12 districts;
$.90/$100 assessment for dual districts with less than 100 WADA;
$.84/$100 assessment for dual districts with 100 or more WADA

(g) $T_{(2)}$ = district tax rate for operating purposes not to exceed .03 for K-12 districts, .0195 for K-8 districts, and .0105 for 9-12 districts

(h) AV_g = guaranteed assessed valuation per $TWADA_c$ for districts: $42,000 for K-12; $64,615 for K-8; $120,000 for 9-12

(i) AV_i = assessed per $TWADA_{(c)}$ in individual district

(j) x = a constant set at 47.619 for dual districts with 100 or more TWADA, 44.444 for dual districts with less than 100 TWADA, and 37.037 for unit districts

The 1976 Amendments to the General State Aid Formula Which Became PA 79-1

These amendments changed the claims of many districts, but since appropriations were not increased to cover the added cost--proration in fact reduced what some districts would have gotten--the bill simply shifted the incident of the receipt of state dollars. PA 79-1 changed a provision of the law that allowed a district to claim payment either on the current year or the previous year's WADA to the current year or the average of the three previous years. This was in response to declining enrollments in many districts. The bill also authorized an increase in the guaranteed assessment levels for K-12 districts to $43,500 and increased the guaranteed assessment level for K-8 districts to $66,300. The maximum tax rate which the state would match was reduced to 2.9 per cent for K-12 districts and 1.9 per cent for K-8 districts. The bill further authorized counting the taxes collected for transportation as operational and for one year saved harmless all districts from decreasing their prorated state payment because of these changes. PA 79-1 increased the total cost of the formula about $100,000,000 and thus caused at least one additional year before the full calculated and authorized claims could be paid, since appropriations

were not increased enough to cover this additional cost. In addition, this amendment repealed the rollback provision of the original act so that the full taxing power granted under Article 17 remains in effect.

These amendments allowed districts willing to tax at very high rates to continue to levy these high taxes as they achieved full funding from the state. They reduced the part of most district tax rates that were necessary to qualify for state aid and guaranteed higher assessments as the level of resources that all would be assured. The combination of these features resulted in more help for some districts with greater wealth and thus the reduction of wealth neutrality and equalization began.

The 1978 Changes in General State Aid

The General Assembly changed the way that aid would be distributed by the following adjustments. The add-on for districts under formulas other than the resource equalizer was changed from 25 per cent to 50 per cent. This was a very important change in the distribution of state money and constituted a political victory for "downstate" school districts in Illinois. The calculation of the formula for calculating compensatory assistance based on Title I students was adjusted by raising the concentration weighting of the resource equalizer for Title I students in a district with the state average to .45

and limiting the maximum to .675. The formula previously presented was changed as follows (4) (d) . . . ~~.375~~ .45 not to exceed ~~.75~~ .675.

The support level was increased to $46,290 for K-12, $70,430 for K-8, and $124,762 for 9-12 districts. This was first passed at a level that would at maximum tax rates guarantee $1,293 per TWADA pupil, but, with the above final figures agreed to in late 1978, the level of support possible rose to $1,310 per TWADA pupil.

These changes significantly increased the share of dollars going to nonurban areas, and they also shifted the districts which received dollars to a number of districts that had fairly high or high property wealth.

The amendments in both 1976 and 1978 changed the benefiting districts and shifted significant numbers of dollars toward relatively more property wealthy districts.

National Trends? Policy Questions to be Answered?

If school finance reformers in Illinois feel disillusioned by the evidence assembled in this report, they have lots of company. Two multistate surveys of the effects of school finance reform, one by Callahan and Wilken(22) and one by Brown, Ginsburg, Killalea, Roshal, and Tron(23) have revealed "mixed" results relative to the effectiveness of some of the school finance reforms of the 1970s. Studies of individual states such

as those of Missouri and Colorado by Odden,(24) Pennsylvania by Harris,(25) Rhode Island by Ward(26), Virginia by Salmon and Shotwell,(27) and New Jersey by Goertz(28) all indicate less than satisfactory results of the particular school finance reform in question. It is, however, much too early to pronounce the school finance reform movement of the 1970s an abject failure. That would be too severe a statement in Illinois, yet alone in the rest of the country. However, it is not unfair to say that these early pathology studies of reform do not auger for a cheerful prognosis.

There are a great many policy matters on which future school finance research can shed some light. It is possible, for example, that school finance reform is regrettably like many other kinds of educational reform. That is, the reform may be successful, but only in the short run. The benefits of the reform then fade after a few years. Very limited evidence from Illinois and Rhode Island suggests this distinct possibility. Related to this is the strong likelihood that progress toward equity goals is possible only with fairly large inputs of new state funds. This was true in Illinois. When these new state funds dry up, due to taxpayer "revolts," or to the effect of recessions on state revenues, then there may be a "natural" movement away from equity goals. It is possible that the loss of students and the effects of inflation on property valuations will also "automatically" move any state away from equity goals. This "slippage" will take place unless the state takes continual

legislative action to attain equity goals. It is also possible that a continual court pressure is necessary to keep the state legislature moving in the direction of equity goals, in which case waves of Serrano-type decisions would be needed. Students of the politics of education may wish to investigate what kind of time lag there is between the "reform" and the "counter-reform." In Illinois it appears that the "counter-reformation" forces took a good four years to get organized. It may also be that progress toward the wealth neutrality goal may have been more substantial and long lasting than progress toward the reduction of expenditure disparity goal. Some limited evidence in the Brown et al. study, and in the Illinois and Missouri studies, suggests that this might be the case. It may well be that future school finance reformers will have to choose between (a) progress toward wealth neutrality, and (b) progress toward the reduction of expenditure disparities.

Finally, the current interest in "tax reform" and the alleged "taxpayer revolt" may have moved interest in equalization of educational opportunity to a very lukewarm back burner.(29) The watchword of the 60s and 70s was indeed "increased equity"; but will that be true of the 80s? Was the concern with equity goals in school finance a child of the "Great Society"? It is certainly not unlikely that interest in equalization of educational opportunity waxes and wanes, just as interest in other social reforms. The new three-year study of school finance mandated by the U.S. Congress, and conducted

by the National Institute of Education, offers an excellent opportunity to try to answer some of these major policy questions. It is to be hoped that at least part of the new three-year study will explore the "why?" of school finance as well as the "how?" of the subject.

Notes and References

Notes and References

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Charts

Chart I

PERMISSIBLE VARIANCE CRITERION
COEFFICIENT OF VARIATION

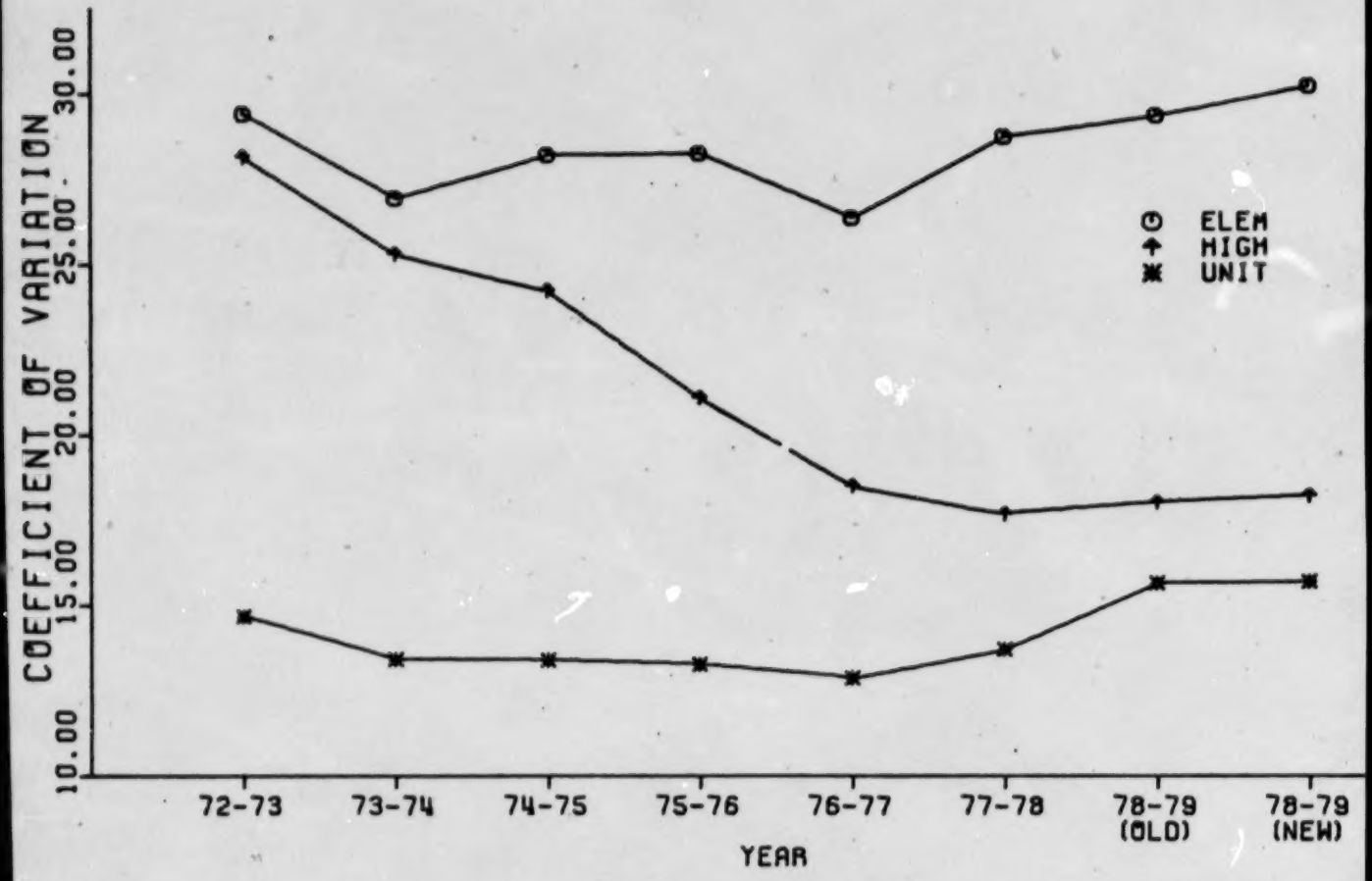


Chart II

PERMISSIBLE VARIANCE CRITERION
MCLOONE INDEX

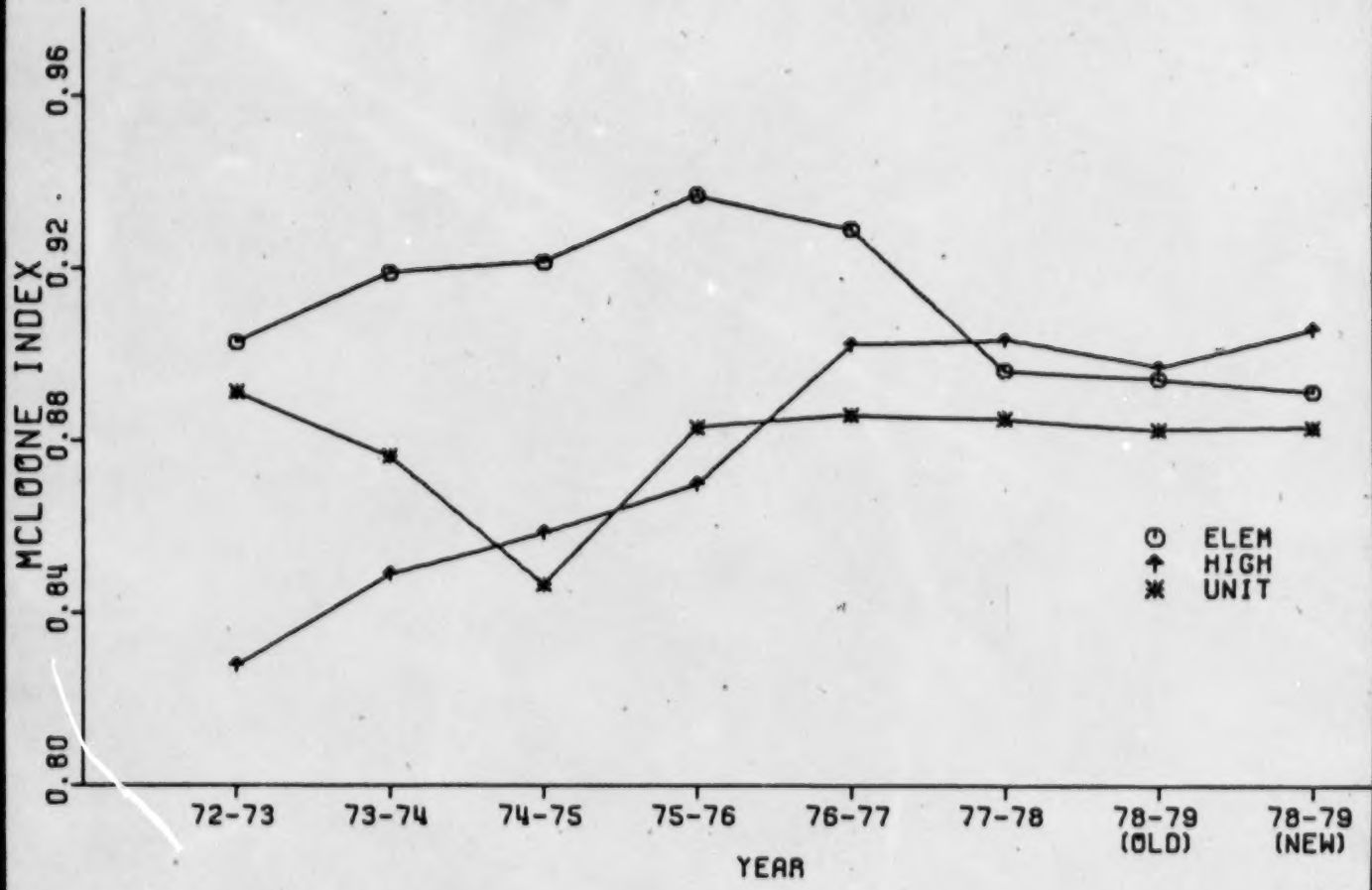


Chart III

FISCAL NEUTRALITY
GINI INDEX
USING PROPERTY VALUATION PER TWADA

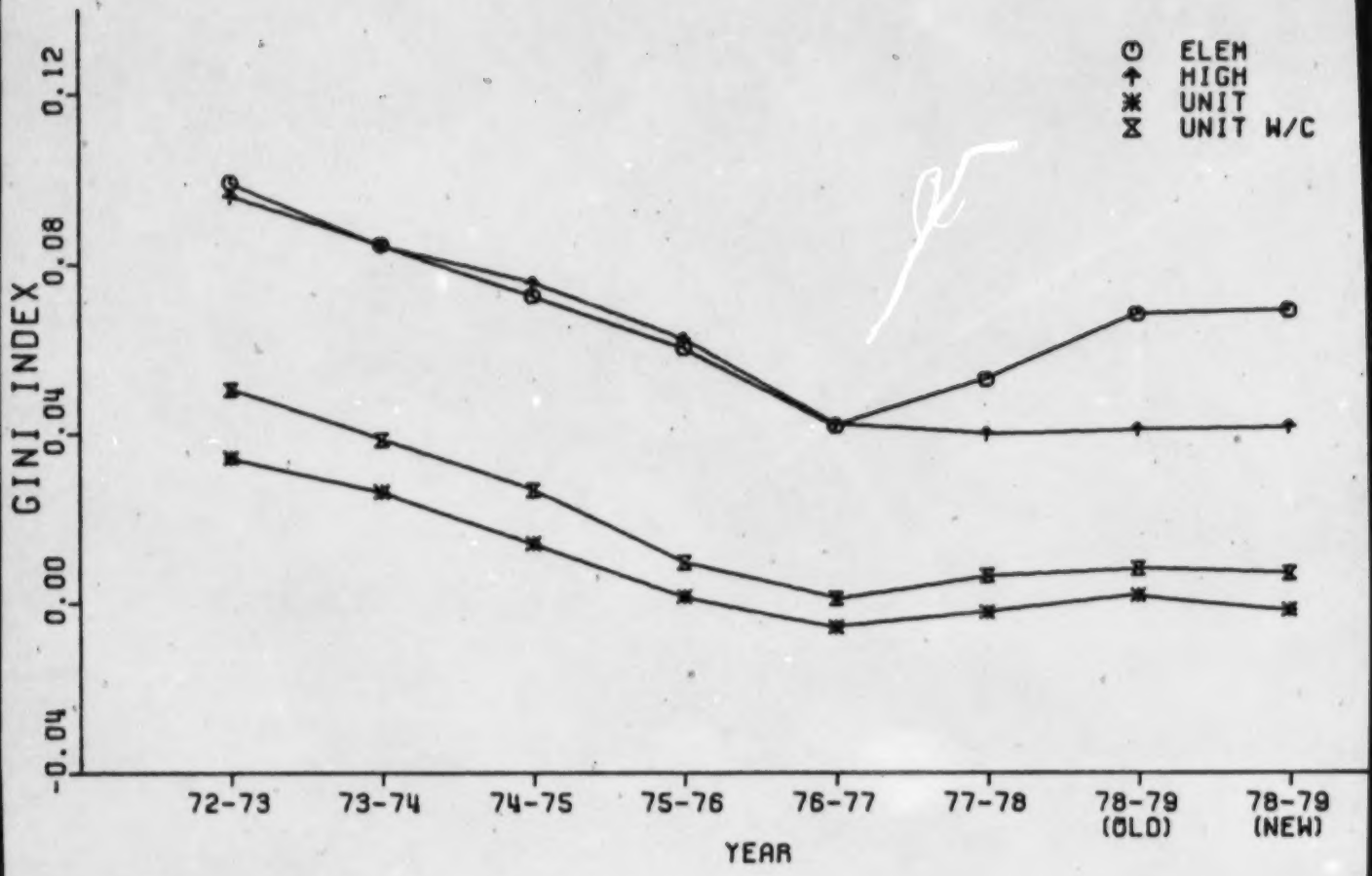


Chart IV

FISCAL NEUTRALITY CRITERION
REGRESSION APPROACH
USING PROPERTY VALUATION PER TWADA

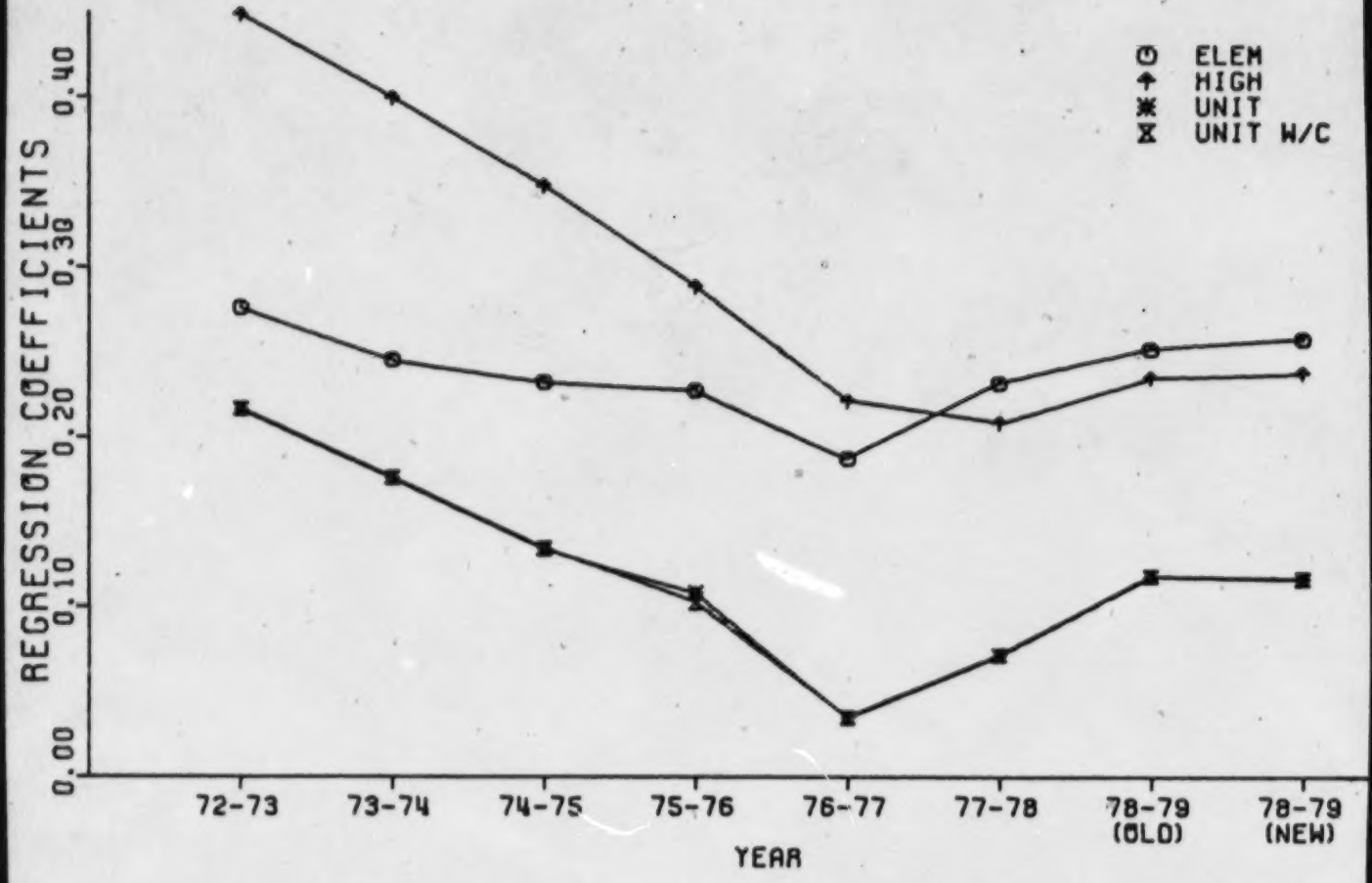
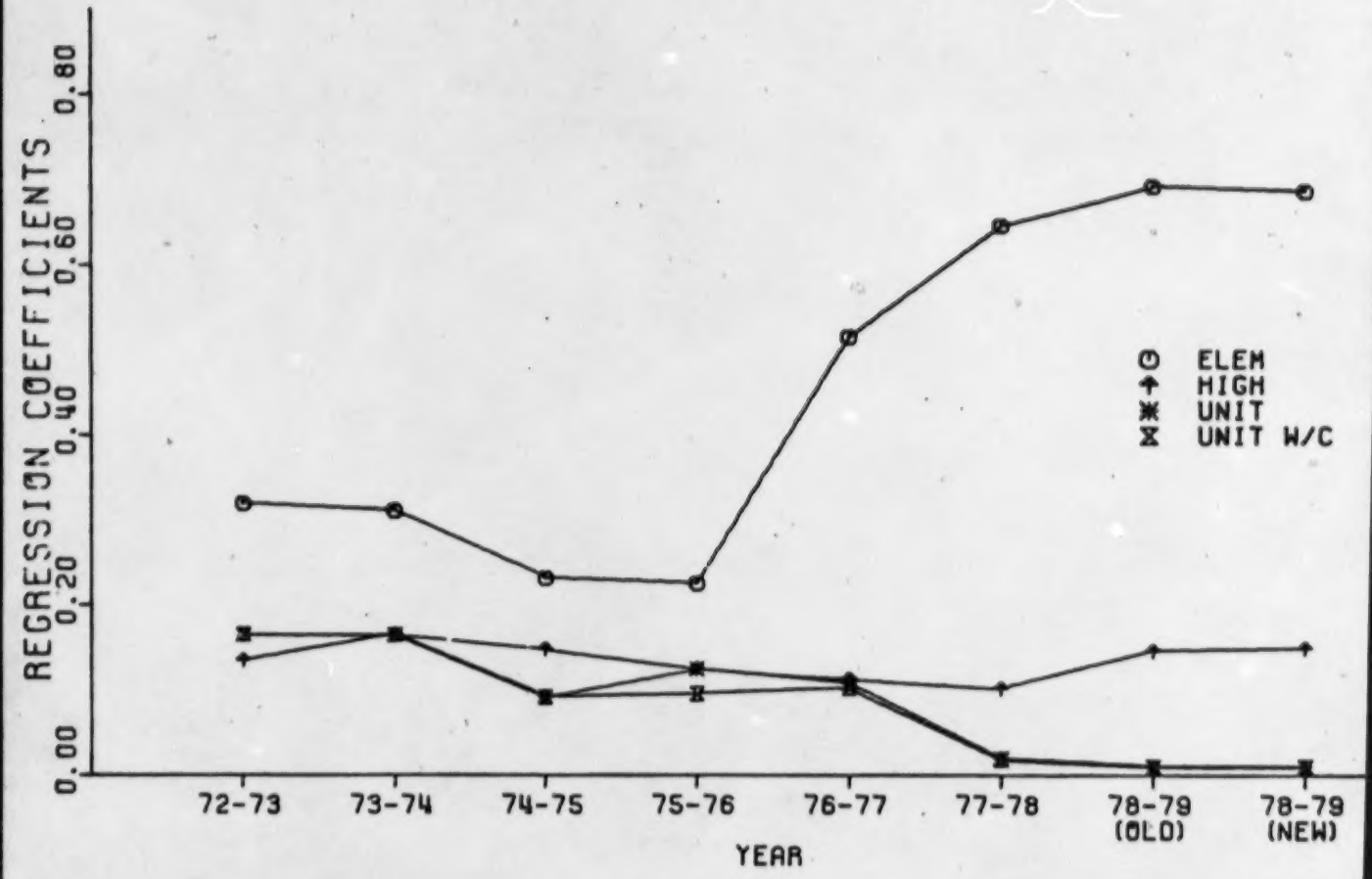


Chart V

FISCAL NEUTRALITY
REGRESSION APPROACH
USING INCOME PER TWADA

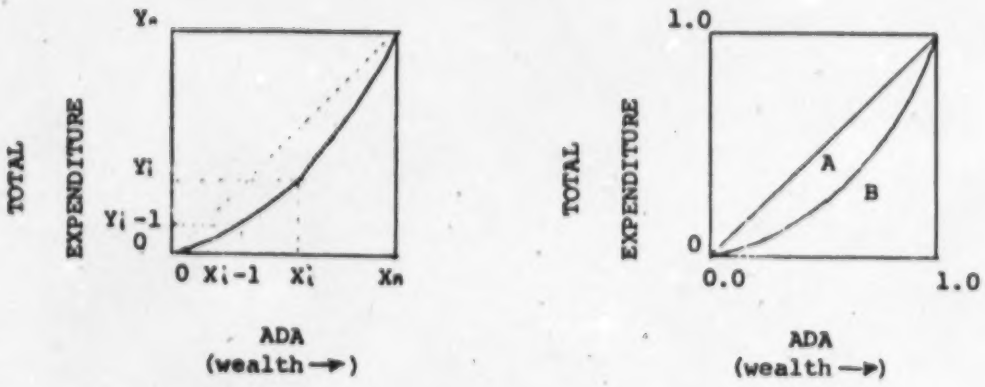


APPENDIX A

Calculation of the Wealth-Weighted Gini Index

COMPUTATION OF GINI COEFFICIENT

The districts are sorted in ascending order of wealth per pupil. The cumulative proportions of pupils in the districts are represented by the horizontal axis and the cumulative proportions of total operating expenditures accounted for by these districts are represented by the



vertical axis. The curve thus plotted would be a straight line if the operating expenditures per pupil were the same in all districts. A sagging curve represents lesser expenditure in poorer districts. The measure of this inequality as defined by Gini Coefficient G is given by the formula:

$$G = \frac{\text{Area A}}{\text{Area (A+B)}}$$

or after further simplication

$$G = \frac{0{\cdot}5 - \text{Area B}}{0{\cdot}5}$$

$$= 1 - 2\text{Area B} \qquad (1)$$

Area B is the area under the curve and if n is the number of districts, and

X_i = cumulative proportion of ADA for the ith district

y_i = cumulative proportion of $ for the ith district

$$\text{Then Area B} = \sum_{i=1}^{n} \frac{(x_i - x_{i-1})\ (y_{i-1} + y_i)}{2}$$

$$\text{or 2 Area B} = \sum_{i=1}^{n} (x_i y_{i-1} - x_{i-1} y_{i-1} + x_i y_i - x_{i-1} y_i)$$

$$= (x_1 y_0 - x_0 y_0 + x_1 y_1 - x_0 y_1$$

$$+ x_2 y_1 - x_1 y_1 + x_2 y_2 - x_1 y_2$$

$$+ x_n y_{n-1} - x_{n-1} y_{n-1} + x_n y_n - x_{n-1} y_n)$$

$$= (x_2 y_1 - x_1 y_2) + (x_3 y_2 - x_2 y_3) + \ldots$$

$$+ (x_n y_{n-1} - x_{n-1} y_n) + x_n y_n$$

$$= \sum_{i=2}^{n} (x_i y_{i-1} - x_{i-1} y_i) + 1 \qquad (2)$$

$$= 1 - \sum_{i=2}^{n} (x_{i-1} y_i - x_i y_{i-1})$$

substituting the value of area B in eq 1

$$G = \sum_{i=2}^{n} (x_{i-1} y_i - x_i y_{i-1}) \qquad (3)$$

Appendix B

Equity Measurements in Illinois: 1973 through 1979

TABLE 1

PERMISSIBLE VARIANCE CRITERION
COEFFICIENT OF VARIATION

	72-73	73-74	74-75	75-76	76-77	77-78	78-79 (Old)	78-79 (New)
Elem.	29.4404	26.9674	28.2265	28.2703	26.3736	28.7523	29.3568	30.2238
High	28.1906	25.3338	24.2582	21.1215	18.5278	17.6998	18.0412	18.2266
Unit	14.7044	13.4378	13.4112	13.2873	12.8929	13.7218	15.6805	15.7085

TABLE 2

PERMISSIBLE VARIANCE CRITERION
McLOONE INDEX

	Unit		High		Elem.	
	Index	Median	Index	Median	Index	Median
72-73	0.90299	$ 798	0.82809	$ 928	0.89152	$ 764
73-74	0.91913	862	0.84944	996	0.87665	851
74-75	0.92161	910	0.85903	1,099	0.84688	944
75-76	0.93728	939	0.87029	1,159	0.88331	1,011
76-77	0.9294	1,049	0.9026	1,271	0.8862	1,117
77-78	0.8966	1,134	0.9036	1,388	0.8853	1,208
78-79 (Old)	0.8946	1,226	0.8972	1,587	0.8827	1,335
78-79 (New)	0.8916	1,220	0.9061	1,566	0.8832	1,329

TABLE 3

FISCAL NEUTRALITY
GINI INDEX
USING PROPERTY VALUATION PER TWADA

	72-73	73-74	74-75	75-76	76-77	77-78	78-79 (Old)	78-79 (New)
Elem.	0.0995	0.0848	0.0727	0.0604	0.0419	0.0528	0.0682	0.0691
High	0.0961	0.0844	0.0756	0.0623	0.0422	0.0399	0.0410	0.0416
Unit	0.0345	0.0265	0.0143	0.0018	-0.0055*	-0.0020*	0.0020*	-0.0015*
Unit W/C	0.0506	0.0387	0.0268	0.0097	0.0012*	0.0066*	0.0083*	0.0071*

*Lorenz Curve crosses the line. Gini coefficient is not interpretable.

TABLE 4

FISCAL NEUTRALITY CRITERION
REGRESSION APPROACH
USING PROPERTY VALUATION PER TWADA

	72-73	73-74	74-75	75-76	76-77	77-78	78-79 (Old)	78-79 (New)
Elem.	0.27679	0.24592	0.23293	0.22803	0.18782	0.23210	0.25192	0.25807
High	0.44843	0.39949	0.34834	0.28896	0.22161	0.20868	0.23513	0.23793
Unit	0.21691	0.17640	0.13493	0.10890	0.03544	0.07204	0.11847	0.11687
Unit W/C	0.21693	0.17642	0.13478	0.10302	0.03533	0.07198	0.11859	0.11703

TABLE 5

FISCAL NEUTRALITY
REGRESSION APPROACH
USING INCOME PER TWADA

	72-73	73-74	74-75	75-76	76-77	77-78	78-79 (Old)	78-79 (New)
Elem.	0.31991	0.31165	0.23250	0.22592	0.51637	0.64721	0.69275	0.68675
High	0.13539	0.16639	0.14900	0.12625	0.11395	0.10251	0.14658	0.14970
Unit	0.16484	0.16530	0.09290	0.12546	0.10860	0.02050	0.01130	0.01130
Unit W/C	0.16649	0.16621	0.09264	0.09670	0.10334	0.01939	0.01076	0.01069

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